

## Implicit Bias and Contact: The Role of Interethnic Friendships

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**ABSTRACT.** In 2 studies, the authors examined the role of interethnic friendship with African Americans or Latinos in predicting implicit and explicit biases against these groups. White participants completed the Implicit Association Test (IAT; Greenwald, A. G., McGhee, D. E., & Schwartz, J. L. K., 1998), several self-report bias measures, and a friendship questionnaire. Participants with close friends who were members of the target group exhibited less implicit prejudice than participants without close friends from the target group. Friendship influenced only 2 of the 7 explicit measures, a result that likely stems from social desirability bias rather than truly nonprejudiced attitudes. Results support the importance of contact, particularly interethnic friendship, in improving intergroup attitudes.

Key words: contact, friendship, implicit attitudes, prejudice

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ALLPORT'S (1954) *CONTACT HYPOTHESIS* provides a theoretical basis for understanding the role of contact in improving intergroup attitudes. The contact hypothesis specifies that contact with out-group members is beneficial to attitudes regarding the out-group when individuals have equal status, have common goals, are in a cooperative or interdependent setting, and have support from authorities. Contact that meets these conditions improves intergroup attitudes more than contact that does not.

Numerous studies have established the positive impact of intergroup contact on attitudes toward ethnic minorities. One particular form of contact, interethnic friendship, is the focus of the present study. Interethnic friendships produce greater prejudice reduction than does contact without friendship (Pettigrew,

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1997; Pettigrew & Tropp, 2000). In fact, Pettigrew (1998) suggested that the contact hypothesis was unnecessarily burdened with conditions and that intergroup friendship is a key concept because friendships involve all of the conditions for optimal intergroup contact.

Two recent studies have demonstrated the value of intergroup friendships. Intergroup friendship related significantly to reduced bias toward ethnic minorities in several European nations (Wagner, van Dick, Pettigrew, & Christ, 2003). Similarly, in a longitudinal study, intergroup friendship at the start of a language course related to reduced bias toward Mexicans one week later (Eller & Abrams, 2003).

Most of the research on contact and prejudice focuses on explicit measures of bias such as social distance and affect. However, overt expressions of racial prejudices involving such variables are increasingly unlikely (e.g., Dovidio & Gaertner, 1991). The modern and aversive perspectives on racism suggest that most individuals avoid expressing blatantly racist attitudes (e.g., Gaertner & Dovidio, 1986; Katz, Wackenhut, & Hass, 1986; McConahay, 1983). This change in the expression of negative attitudes suggests that measures of explicit racial attitudes may not sufficiently tap racial attitudes. Following from the extensive body of literature on contact and prejudice, we predicted that interethnic friendships improve explicitly stated attitudes (e.g., Pettigrew & Tropp, 2000). However, we recognized that changes in the expression of racial attitudes may result in greatly reduced measures of explicit bias. If participants are reluctant to indicate bias, the impact of interethnic friendship may not be observed on explicit measures.

### *Implicit Attitudes*

An advantage of measures of implicit attitudes is that, unlike measures of explicit measures, they are not influenced by social desirability or self-presentation bias (Brauer, Wasel, & Niedenthal, 2000). As such, implicit measures tap attitudes that individuals are unlikely or unable to express overtly (Greenwald & Banaji, 1995). Several common implicit measures focus on categorization of computer-presented stimuli with the assumption that speed of categorization is faster for categories consistent with attitudes. For example, a person with negative attitudes toward African Americans would more quickly categorize stimuli consistent with negative attitudes such as pairing an African American face with a negative word (e.g., "hate") than pairing the face with a positive word (e.g., "love").

### *Implicit Attitudes and Contact*

We know of no research that addresses the impact of interethnic friendships on implicit attitudes. In one perspective, Karpinski and Hilton (2001) argue that implicit attitudes reflect environmental associations. In this view, implicit attitudes reflect associations that are experienced by the individual. Thus, negative implicit evaluations of African Americans by Whites from the United States result

from immersion in a society with a long history of racial bias. The long history of bias contributes to repeated association of African Americans with negatively valent thoughts and attitudes, producing negative implicit attitudes toward African Americans. By the same token, friendships with African Americans likely produce positive associations, promoting positive implicit associations toward African Americans.

A few investigators have examined the impact of different forms of contact on implicit attitudes. Though contact is not equivalent to friendship, studies of contact are relevant because all friendships involve contact. Further, contact without friendship does not significantly improve explicit intergroup attitudes, albeit not as strongly as contact with friendship (Pettigrew & Tropp, 2000). The present investigators suggest that examining the impact of contact without friendship provides valuable information about the impact of contact with friendship as well.

Lowery, Hardin, and Sinclair (2001) found that participants who completed their Implicit Association Test (IAT; Greenwald, McGhee, & Schwartz, 1998) exhibited less implicit bias toward African Americans in the presence of an African American experimenter than when in the presence of a White experimenter, suggesting that contact experiences may reduce preference for Whites on the IAT. As the experimenter-participant relationship is interdependent, one of the key features of the contact hypothesis is met. This may mirror some aspects of friendship, as friendships are interdependent relationships as well. Similarly, exposure to the names of admired African Americans (e.g., "Martin Luther King") and disliked Whites (e.g., "Charles Manson") reduced pro-White implicit bias (Dasgupta & Greenwald, 2001). Exposure to admired out-group members is similar to the friendship aspect of interethnic friendship.

Also relevant are studies that examine the experiences of students who are enrolled in diversity education courses. Students who are taking diversity education courses evidenced less implicit bias than a control group of students not enrolled in diversity education (Rudman, Ashmore, & Gary, 2001). More generally, a large-scale study of campus diversity found that students exposed to courses addressing issues of race, ethnicity, and interethnic relationships evidenced a greater ability to understand out-group perspectives (Gurin, 1999). Enrollment in diversity education is likely similar to some aspects of friendship processes because friends may discuss issues of race directly or may gain understanding of out-group perspectives and behaviors through exposure to each other's opinions and experiences and behaviors.

Other studies, however, found no relationship between contact and implicit bias. Contact with elderly persons was unrelated to implicit bias toward older adults (Jelenec & Steffens, 2002), and contact with the obese did not influence implicit antifat bias (Teachman & Brownell, 2001). However, both studies measured only the amount of contact that participants experienced with each group, and the studies did not specify whether the contact was positive or negative or

whether it satisfied any conditions of the contact hypothesis. Further, it is unclear whether any of the relationships that the studies measured involved friendships.

### **STUDY 1**

#### **Hypotheses**

In Study 1 of the present experiment, we formed the following hypotheses regarding reactions to African Americans.

*Hypothesis 1:* Participants with African American friends exhibit less implicit pro-White bias than participants without African American friends.

*Hypothesis 2:* Participants with African American friends exhibit less explicit pro-White bias than participants without African American friends.

#### **Method**

##### *Participants*

Participants were a total of 94 undergraduate students at a public university in the United States who participated in exchange for extra course credit. In our analyses, we used data from only White participants ( $n = 70$ ). This sample consisted primarily of women (83%) with an average age of 22.2 years ( $SD = 4.6$  years).

##### *Procedure*

Prior to the experiment, all participants read and signed an informed consent agreement detailing the procedures of the study. Participants next completed the IAT. Following completion of the IAT, participants received a questionnaire including the explicit measures below and demographic questions. After completing the questionnaire, participants received a debriefing form.

##### *Implicit Attitude Measure*

We used Inquisit Software by Millisecond (2002) to conduct the IAT. IAT scores represent implicit attitudes toward African Americans. Each IAT used 25 White male names (e.g., “Adam” and “Chip”), 25 African American male names (e.g., “Alonzo” and “Jamel”), 25 positive nouns (e.g., “freedom” and “love”), and 25 negative nouns (e.g., “abuse” and “vomit”) as stimuli.

Participants engaged in four types of categorization tasks using the IAT. All tasks required participants to classify a stimulus object (a name or a noun) into one of two categories using the “I” or “E” key on the keyboard. For all tasks, a large “X” appeared on the screen when participants incorrectly classified stimuli. After an incorrect classification, participants had to classify the stimuli correctly

to continue. Two of the categorization tasks served as practice. These tasks involved categorizing a presented noun as positive or negative and classifying names as typical of African Americans or Whites.

The two remaining classification tasks completed the implicit attitude measure. For both of these tasks, the computer randomly presented a series of names and nouns one item at a time. One task asked the participant to classify the stimuli as either “White or negative” or “African American or positive.” For example, if the computer presented the noun “flower,” then the participant should classify this as African American or positive. If the computer presented the name “Chip,” then the participant should classify this as White or negative. This is termed the *noncompatible block*, because the pairing of White and negative is not consistent with pro-White bias. Another task required classification of names or nouns as either “White or positive” or “African American or negative.” This is termed the *compatible block* because the pairing of White and positive is consistent with pro-White bias.

For each block, there are practice trials, and counterbalancing randomizes both (a) the order of compatible and noncompatible blocks and (b) the presentation of categories between the left and right sides of the screen. The IAT score is the difference in reaction times between the noncompatible and compatible trials. Positive IAT scores indicate faster reaction times for compatible trials, suggesting pro-White bias. Negative IAT scores indicate faster reaction for non-compatible trials, indicating pro-African American bias. See Greenwald et al. (1998) for a full description of the test and the stimulus items.

### Measures

For Study 1, the contact measure was current self-defined close friendships with African Americans. Participants indicated the number of their current close African American friends. Using this information, we classified participants as having either no close African American friends or one or more close African American friends. Participants completed four measures of explicit bias: the Modern Racism Scale (McConahay, Hardee, & Batts, 1981), the Diversity Scale and the Discrimination Scale (Wittenbrink, Judd, & Park, 1997), and a semantic differential scale that includes ratings of White and African Americans on five items. We measured items on the Modern Racism Scale, the Diversity Scale, and the Discrimination Scale by 5-point Likert-type scales (from  $-2 = disagree strongly$  to  $+2 = agree strongly$ ). Scores on the seven-item Modern Racism Scale ranged from  $-14$  to  $+14$  on items such as “Blacks are getting too demanding in their push for equal rights.” The 10-item Discrimination Scale ranges from  $-20$  to  $+20$  and includes items such as “Black people often blame the system instead of looking at how they could improve their situation themselves.” The four-item Diversity Scale asks respondents their level of agreement with items such as “Whites will need to learn about Black culture if positive interethnic relations are

to be achieved.” Diversity scores range from  $-8$  to  $+8$ . For the semantic differential scale, participants mark 1 of 7 points on a broken line between each item pair (e.g., Good—Bad, Beautiful—Ugly) with higher scores on each item indicating more favorable responses.

For Study 1, the present investigators subtracted summed African American ratings from summed White ratings to create a single item indicating group preference that ranged from  $-30$  to  $+30$  with higher numbers indicating stronger pro-White scores.

## Results

### *Transformation of the Implicit Measure and Data Screening*

For each relevant trial block, there were 40 response latencies. Following Greenwald et al. (1998), we recoded latencies that were faster than 300 ms as 300 ms and those slower than 3,000 ms as 3,000 ms. The first two latencies of each trial were dropped because these trials typically represent slower responses. We then subjected the averages of the 38 remaining latencies to a logarithmic transformation and took the difference between compatible and incompatible log-transformed means to create a single IAT score per person.

The Modern Racism Scale was positively skewed. A square-root transformation normalized the distribution. The remaining dependent variables were normally distributed. For the comparison, Levene’s test indicated that the data met the homogeneity-of-variance assumption.

### *Implicit Bias*

Implicit bias was strong, with compatible stimuli (e.g., for “White and good,”  $M = 814.2$  ms,  $SD = 178.9$  ms) producing faster reactions than noncompatible stimuli (e.g., for “African American and good,”  $M = 1010.8$  ms,  $SD = 211.7$  ms),  $t(69) = 9.5$ ,  $p < .001$ ,  $d = 1.05$ . Participants evidenced correct initial classification on 92% of the trials. To address IAT reliability, we created computed difference scores (noncompatible score minus compatible score) by comparing each of the 38 trials (e.g., Bosson, Swann, & Pennebaker, 2000). As Table 1 shows, the IAT was adequately reliable.

Consistent with Hypothesis 1, contact influenced implicit bias. Individuals with close African American friends exhibited less implicit bias than did individuals without such friends (see Table 1). This finding suggests that interethnic friendships are valuable in reducing implicitly held biases.

### *Explicit Bias*

As shown in Table 1, individuals with close African American friends scored lower on the Modern Racism Scale than did individuals without African

**TABLE 1. Bias Measures and Friendship With African Americans**

Measure	IAT	Modern Racism	Discrimination	Diversity	Semantic Differential
No friends					
<i>M</i>	231.6	-8.1	-7.9	-3.0	0.0
<i>SD</i>	190.8	4.8	8.5	3.1	2.7
<i>N</i>	41	39	37	39	41
Friends					
<i>M</i>	147.4	-11.0	-9.6	-3.0	-1.0
<i>SD</i>	164.6	2.9	6.8	3.2	2.2
<i>N</i>	29	24	25	25	29
Total					
<i>M</i>	196.7	-9.2	-8.6	-3.0	-0.4
<i>SD</i>	183.9	4.3	7.8	3.1	2.6
<i>N</i>	70	63	62	64	70
Differences					
<i>t</i>	2.1	2.6	0.9	0.0	1.6
<i>p</i>	.04	.005	.39	.99	.11
<i>d</i>	0.50	0.69	0.22	0.00	0.40
Reliability	.74	.78	.89	.64	
White					.96
African American					.95

*Note.* IAT = implicit association test. Untransformed values are reported for the IAT and Modern Racism Scale for better interpretability. IAT scores represent noncompatible trials minus compatible trials. Transformed values were used to calculate *t*, *p*, and *d*. Sample sizes differ because of missing data.

American friends. Contrary to Hypothesis 2, no significant differences existed between these groups on the discrimination, diversity, and semantic differential measures. Scores on the explicit measures were low, suggesting a floor effect. For the Modern Racism Scale ( $M = -9.2$ ), only 1% of participants (one participant) got a score in the positive (i.e., modern racist) range. Similarly, only 16% of participants got positive scores on the Discrimination Scale ( $M = -8.6$ ), 14% got positive scores on the Diversity Scale ( $M = -3.0$ ), and 16% favored Whites on the semantic differential measure ( $M = -0.4$ ) with 53% of participants scoring zero.

#### *Correlations Between Measures*

Correlations between scores on the implicit association measure and the explicit bias measures were low, ranging from .15 to .25. Similarly, the semantic differential scale had only small correlations (.11 to .23) with the other explicit

measures. The Modern Racism Scale, the Diversity Scale, and the Discrimination Scale had moderate-to-large correlations (.56 to .72).

## **STUDY 2**

### **Hypotheses**

In Study 2 of the present experiment, we formed the following hypotheses regarding reactions to Latinos.

*Hypothesis 1:* Participants with Latino friends exhibit less implicit pro-White bias than participants without Latino friends.

*Hypothesis 2:* Participants with Latino friends exhibit less explicit pro-White bias than participants without Latino friends.

### **Method**

#### *Participants*

Participants were a total of 96 undergraduate students at a public university in the United States who participated in exchange for extra course credit or to fulfill research participation requirements. Only data from the 78 White participants were used for the analyses later in Study 2. In this sample, most participants were women (74%) and the average age was 22.1 years ( $SD = 6.0$  years).

#### *Materials and Procedures*

The procedures and IAT for Study 2 were identical to those for Study 1 with the following exceptions. First, Latino names (e.g., "Jorge" and "Manuel") replaced the African American names. Second, the test used 16 rather than 25 names for the White and Latino targets. We adapted versions of the Discrimination Scale, the Diversity Scale, and the semantic differential scale to refer to Latino targets instead of African American ones. Despite the floor effects demonstrated in Study 1, we included these measures, as it is unclear whether overt expression of anti-Latino bias mirrors overt expression of anti-African American biases. For Study 2, the contact measure was self-defined close friendships during college.

### **Results**

#### *Transformation of the Implicit Measure and Data Screening*

We handled the IAT data as we indicated earlier in the present article for Study 1. Scores on the Discrimination Scale evidenced significant positive skew.

A square-root transformation remedied this problem. The semantic differential scale was negatively skewed. A reflected logarithmic transformation eliminated the skew problem and improved—but did not eliminate—problems with kurtosis. The Diversity Scale was normally distributed. For each *t* test, Levene's test indicated that the data met homogeneity-of-variance assumptions.

### *Implicit Bias*

As in Study 1, in Study 2 the compatible stimuli (e.g., for “White and good,”  $M = 749.8$ ,  $SD = 152.3$ ) produced faster reactions than did noncompatible stimuli (e.g., for “Latino and good,”  $M = 923.1$ ,  $SD = 188.4$ ),  $t(77) = 8.7$ ,  $p < .001$ ,  $d = 1.04$ . Participants evidenced correct initial classification on 94% of the trials. Again, the IAT was adequately reliable. Table 2 shows that, consistent with our primary hypothesis, contact influenced implicit bias. Individuals with close Latino friends exhibited less implicit bias than did individuals without such friends.

**TABLE 2. Bias Measures and Friendship With Latinos**

Measure	IAT	Discrimination	Diversity	Semantic Differential
No friends				
<i>M</i>	229.3	-7.97	-2.14	-.45
<i>SD</i>	184.8	7.65	3.49	1.90
<i>N</i>	30	30	29	29
Friends				
<i>M</i>	138.2	-10.60	-3.63	-1.5
<i>SD</i>	178.3	6.70	3.07	3.50
<i>N</i>	48	48	46	48
Total				
<i>M</i>	173.3	-9.59	-3.05	-1.10
<i>SD</i>	185.1	7.15	3.30	3.02
<i>N</i>	78	78	75	77
Differences				
<i>t</i>	2.2	1.7	1.9	-1.5
<i>p</i>	.03	.09	.06	.15
<i>d</i>	0.50	0.37	0.46	1.04
Reliability				
White	.80	.86	.67	.93
Latino				.94

*Note.* IAT = implicit association test. Untransformed values are reported for the IAT, Discrimination, and Semantic Differential Scales for better interpretability. Transformed values were used to calculate *t*, *p*, and *d*. Sample sizes differ because of missing data.

### *Explicit Bias*

Somewhat consistent with our predictions, individuals with close Latino friends indicated less bias on the Diversity Scale than those without close Latino friends although this result did not attain a traditional level of statistical significance. However, we observed no differences between participants with close Latino friends and those without on the Discrimination Scale or the semantic differential scale. Again, scores on the explicit measures were low. Only 8% of participants got positive scores on the Discrimination Scale ( $M = -9.6$ ), 10% got positive scores on the Diversity Scale ( $M = -3.1$ ), and 5% favored Whites on the semantic differential measure ( $M = -1.1$ ) with 53% of participants scoring zero (i.e., no differences between groups).

### *Correlations Between Measures*

Correlations between scores on the implicit association measure and the explicit bias measures were low, ranging from .02 to .11. Similarly, the semantic differential scale had only small correlations (.10 to .31) with the other explicit measures. The Diversity Scale and the Discrimination Scale were strongly correlated (.71).

## **GENERAL DISCUSSION**

The present experiment examined the relationship between interethnic friendship and implicit and explicit prejudice toward African Americans and Latinos. Consistent with literature on implicit attitudes, compatible information produced faster reactions than noncompatible information, evidencing an overall pattern of strong pro-White attitudes. Though most participants exhibited implicit bias, those participants who had close out-group friends scored lower on the implicit bias measure than those without such friends. Because implicit measures examine unconscious attitudes, the present results suggest that interethnic friendships with African Americans and Latinos reduce unconscious biases toward African Americans and Latinos, respectively.

The role of interethnic friendships in improving implicit attitudes is consistent with the proposition that implicit attitudes reflect environmental associations (e.g., Karpinski & Hilton, 2001). This perspective posits that implicit attitudes tap associations that the individual is exposed to in his or her environment. From this perspective, our findings suggest that individuals who have friends from other ethnic groups are more likely to be exposed to positive associations with African Americans and Latinos and that these associations are reflected in positive IAT scores.

Interestingly, our results largely failed to replicate prior findings regarding explicit biases. For five of the seven measures of explicit bias, participants with out-group friends did not differ significantly from those with no such friends.

Though we failed to support hypotheses regarding the role of friendship in reducing explicit prejudice, we hesitate to suggest that interethnic friendship is unrelated to explicit bias. Rather, as suggested by modern and aversive racism perspectives, pressures against the expression of racially negative attitudes may result in reductions in overt expressions of racist attitudes (Gaertner & Dovidio, 1986; McConahay, 1983). The present measures of explicit bias support this proposition. For example, on our semantic differential scale, the majority of participants rated both groups equally. Similarly, biased scores on the Modern Racism Scale, the Diversity Scale, and the Discrimination Scale were uncommon. The overall pattern of low scores on explicit bias measures stands in contrast to the implicit bias measures that evidenced strong pro-White biases. This finding supports the importance of implicit attitude measurement because we found negative implicit attitudes among participants who explicitly indicated that they were not prejudiced.

### *Limitations*

A primary limitation of the present experiment is its correlational nature. It is unclear whether interethnic friendships reduce implicit bias or whether individuals who are less implicitly biased are more likely to have out-group friends. Further, our sample included only U.S. college students most of whom were women. Because most participants were women, it was impossible to examine gender differences in bias. Regarding explicit attitude measurement, the relatively low explicit bias scores in both Study 1 and Study 2 suggest that the explicit bias measures that we used may be poor measures of prejudice, possibly as a result of social desirability bias. Future investigators should use other measures that are less sensitive to such unsought biases.

### *Conclusions*

Despite limitations regarding the correlational nature of the present data, the present findings demonstrate that interethnic friendships are related to lower implicit biases. Therefore, establishing interethnic contact situations that promote friendships may be an important step to reducing prejudice.

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